

NWS FORM E-5 U.S. Department of Commerce
NOAA, NATIONAL WEATHER SERVICE

HSA OFFICE:
Grand Rapids, MI

MONTHLY REPORT OF RIVER AND FLOOD CONDITIONS

REPORT FOR (MONTH & YEAR):
November 2024

TO: NATIONAL WEATHER SERVICE (W/OS31)
HYDROMETEOROLOGICAL INFO CENTER
1325 EAST-WEST HIGHWAY, RM 13468
SILVER SPRING, MD 20910

DATE:
December 13, 2024

SIGNATURE:
Bruce Smith, MIC
Andrew Dixon, Service Hydrologist

When no flooding occurs, include miscellaneous river conditions, such as significant rises, record low stages, ice conditions, snow cover, droughts, and hydrologic products issued (WSOM E-41).

An **X** inside this box indicates that no flooding occurred within this hydrologic service area.

Summary

November 2024 featured a return to more normal amounts of precipitation across Lower Michigan. This led to some improvement in drought conditions, especially in northern Lower Michigan, and brought streamflows up generally into the low end of the normal range for this time of year. As temperatures dropped, the rainstorms changed to accumulating snow in northern areas by the end of November, with a quick jumpstart to a winter snowpack over and north of the Muskegon River basin.

Flood Conditions

As had been the case in previous months, the Kalamazoo and Grand river basin mainstems spent most of the month at the low end of the normal range (25th percentile), while the Muskegon River basin and points northward were more dramatically low, closer to the 10th percentile. At all sites, several widespread rain events spaced out during the first half of the month led to water level jumps up to near normal. There was no flooding across the area during the month of November. Overall, soils remain drier than normal (figure 4) for this time of year, which may work to our advantage in a few months as we think about spring flood risks. Similarly, the U.S. Drought Monitor depiction of Michigan shows improvement of the Severe Drought in northern Lower Michigan, but a steady continuation of moderate drought designation across much of the southern Lower Peninsula.

Flood Stage Report

No forecast points exceeded flood stage during the month. Thus, the NWS Form E-3 "Flood Stage Report" was not issued.

River Conditions

The end of November percentage of normal flow for selected rivers is listed below:

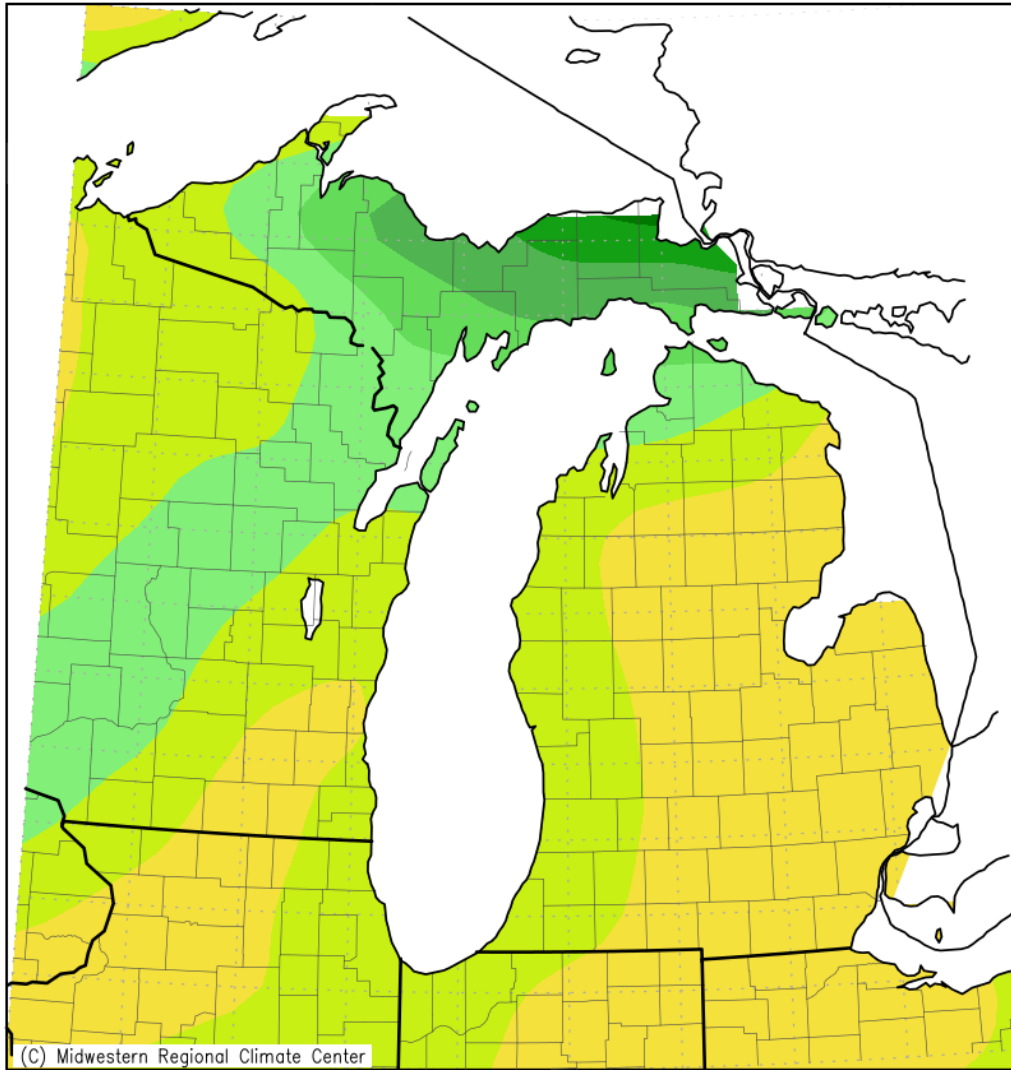
<u>Location</u>	<u>River</u>	<u>% of Normal</u>
Scottville	Pere Marquette	81
Whitehall	White	74
Ewart	Muskegon	58
Mt. Pleasant	Chippewa	62
Lansing	Grand	77
Grand Rapids	Grand	60
East Lansing	Red Cedar	67
Hastings	Thornapple	58
Battle Creek	Battle Creek	71
Battle Creek	Kalamazoo	76

General Hydrologic Information

November precipitation amounts for Grand Rapids, Lansing, and Muskegon, Michigan, were 3.46, 2.66, and 3.66 inches, respectively (Figure 1). Monthly departures were +0.36, +0.20, and +0.74 inches, respectively. Yearly departures were -3.10, +0.08, and +0.49 inches for Grand Rapids, Lansing and Muskegon, respectively. Percent of mean precipitation for November 2024 is shown in Figure 2.

Temperatures for the month of November at Grand Rapids, Lansing and Muskegon were much warmer than average. The monthly average temperature departures for these sites were +4.0, +4.2, and +4.6 degrees Fahrenheit, respectively.

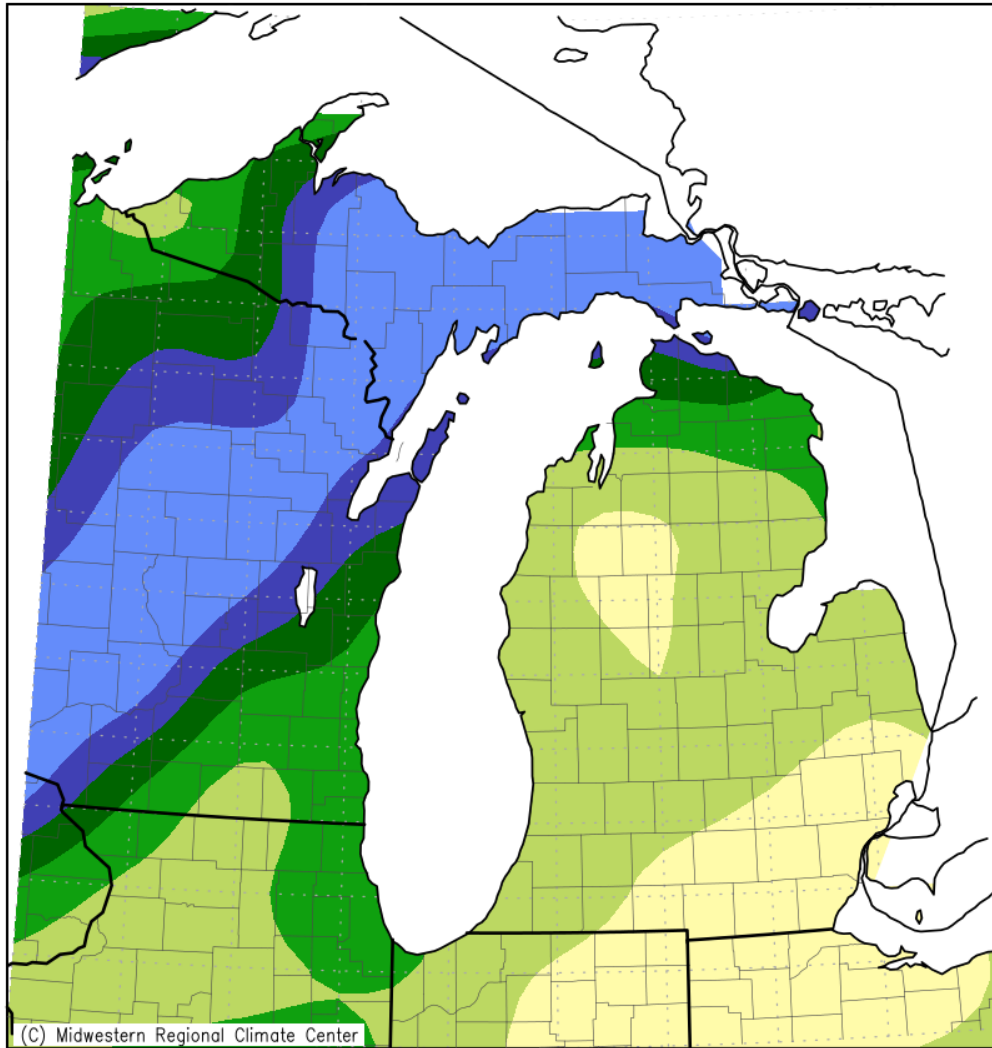
Accumulated Precipitation (in)
November 1, 2024 to November 30, 2024



Midwestern Regional Climate Center
cli-MATE: MRCC Application Tools Environment
Generated at: 12/13/2024 2:36:36 PM EST

Figure 1. November 2024 Monthly Precipitation Totals.

Accumulated Precipitation: Percent of Mean
November 1, 2024 to November 30, 2024



Mean period is 1991–2020.



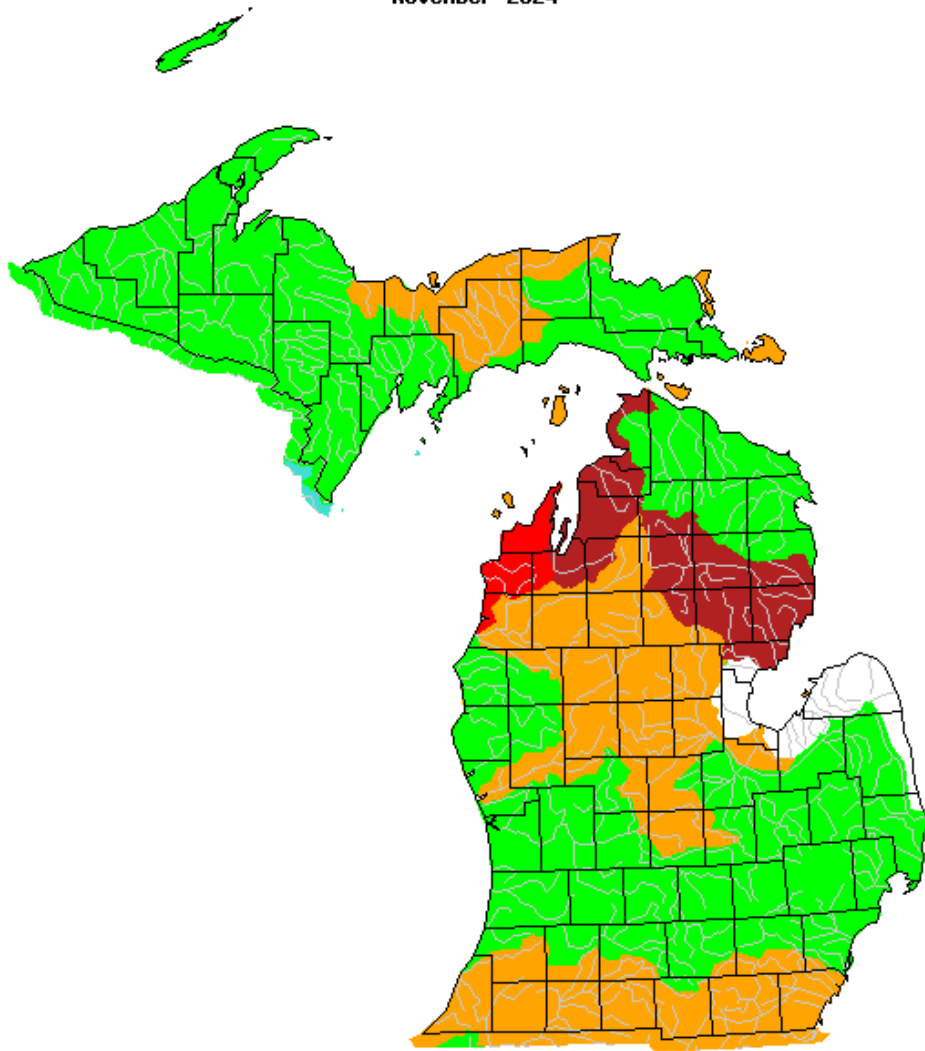
Midwestern Regional Climate Center

cli-MATE: MRCC Application Tools Environment

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Figure 2. November 2024 Percent of Mean of Accumulated Precipitation. The driest parts of the state (Eastern U.P. and northern Lower Peninsula) received the highest amounts of precipitation.

November 2024



Explanation - Percentile classes							
Low	<10	10-24	25-75	76-90	>90	High	No Data
	Much below normal	Below normal	Normal	Above normal	Much above normal		

Figure 3. USGS monthly streamflow for November, grouped by significant hydrologic units. Note streamflows remain near to below normal for this time of year.

Calculated Soil Moisture Ranking Percentile NOV, 2024

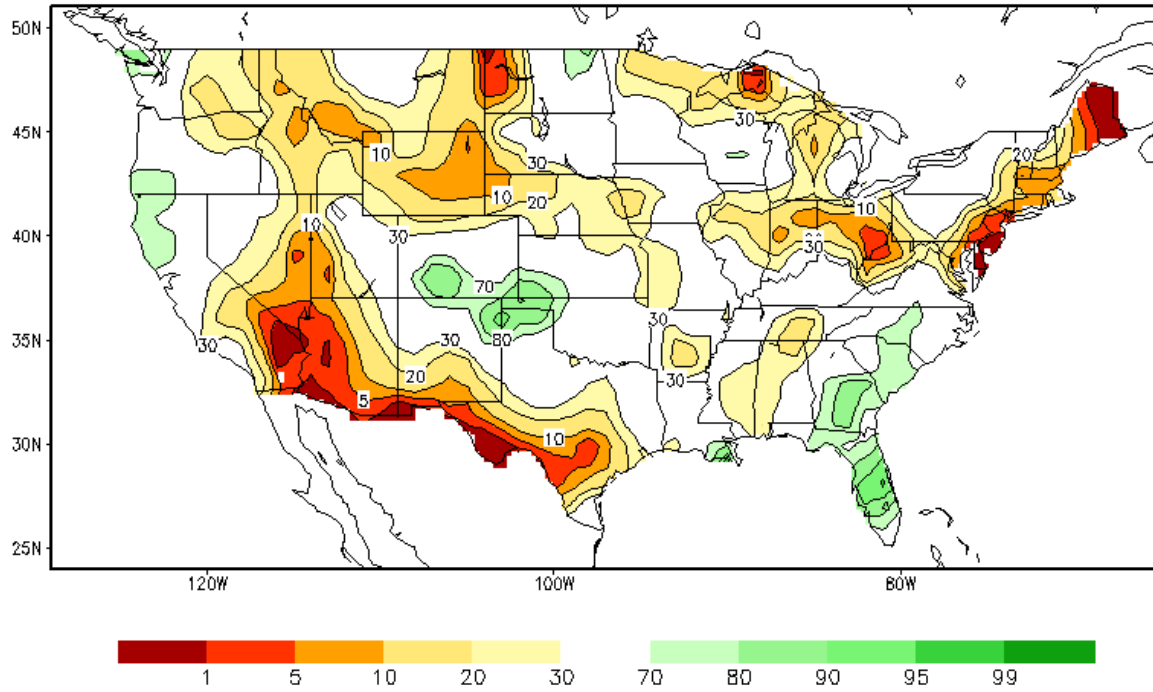
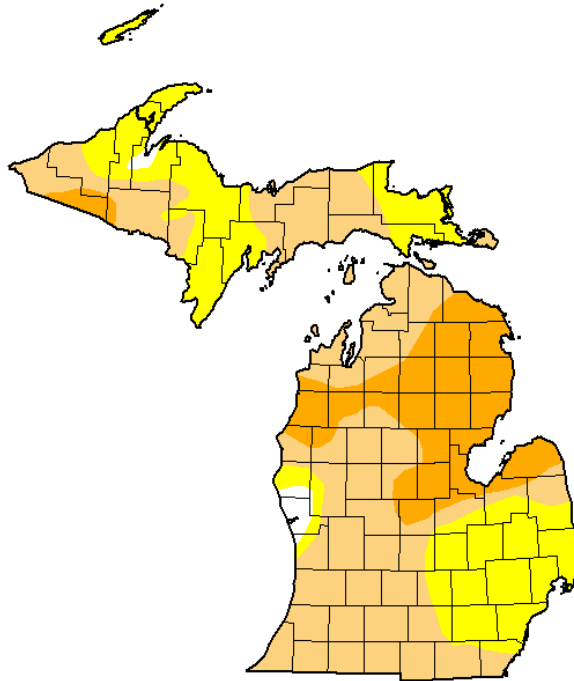








Figure 4. Chart of monthly values of soil moisture, by percentile ranking. This supports the idea that soil moisture levels remain below normal for this time of year.

U.S. Drought Monitor
Michigan

November 26, 2024
(Released Wednesday, Nov. 27, 2024)
Valid 7 a.m. EST



Intensity:

-  None
-  D0 Abnormally Dry
-  D1 Moderate Drought
-  D2 Severe Drought
-  D3 Extreme Drought
-  D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to <https://droughtmonitor.unl.edu/About.aspx>

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droughtmonitor.unl.edu

Figure 5. U.S. Drought Monitor showing persistent drought across much of Michigan, but some improvement this month is noted in the hardest hit areas of Northern Lower and eastern Upper Peninsulas.

Hydrologic Products issued this month

- 30 Hydrologic Summaries (ARBRVAGRR)
- 1 Probabilistic Hydrologic Outlook (ARBESFGRR)
- 0 Event-driven Hydrologic Outlook (ARBESFGRR)
- 0 Daily River Forecasts (ARBRVDGRR)
- 0 Areal Flood Advisory Statements (ARBFLSGRR)
- 0 Flood Warning Statements (ARBFLWGRR)
- 0 Flood Watch Statements (ARBFFAGRR)
- 0 River Statements (ARBRVSGRR)

News Articles and Related Documentation

None